sidered as November–April; and that the precipitation which occurs outside that winter period, unless abnormal, has relatively little effect in varying the run-off. In other words, it would seem that the winter snows afford the main supply from which the entire year's run-off occurs. Table No. 2 (not reproduced) gives the data shown on Diagram No. 2.

The purpose as stated above for attempting to show the relation expressed by the curves on the diagrams is to permit estimating probable water supply as far in advance as possible. During the period August–February the flow of Bear River is relatively steady and not subject to great range in stage. Hydrographs show much less variation in form during this nonflood period than occur during the flood period. Such being the case, it should be possible to fairly accurately estimate in advance the monthly run-off during the nonflood period by using the form shown by the hydrographs of previous years, being guided as to total quantity by the relation shown in the diagrams.

NOTES, ABSTRACTS, AND REVIEWS.

RESIGNATION OF DR. C. F. BROOKS.

Charles F. Brooks, Meteorologist, United States Weather Bureau and Editor of the MONTHLY WEATHER REVIEW, resigned on June 30, 1921, to accept a newly created associate professorship in meteorology and climatology at Clark University, Worcester, Mass. He writes as follows concerning his new work:

Dr. Wallace W. Atwood, the new president of Clark University, is developing a graduate school of geography. He fittingly recognizes that one of the first requisites in any well-rounded system of instruction in geography is a study of climates, for the atmospheric conditions control to a large extent both the agricultural products and the living habits of man. President Atwood also appreciates that climatology can not be taught adequately without the physical aspects of meteorology. Thus, beginning in the Summer School of 1921, elementary and advanced courses and opportunities for research in both meteorology and climatology are offered. The titles of those to be given in the winter semester are: Meteorology, The Passing Weather, Climatology, Climates of the World, Climatic Environments of the White Race. A fairly complete weather-observing station is being established, primarily for purposes of instruction.

The plan of Clark University includes research as well as teaching. For example, each member of the staff of the School of Geography is expected to spend several months every two years in travel. The results of each expedition are to be published within a year after the return.

The United States Weather Bureau has been most helpful in various ways, especially in providing publications for the university library.

This addition to the all-too-few institutions offering graduate instruction in Meteorology and Climatology is welcomed by the Weather Bureau as providing another source from which its scientific personnel can be recruited.—*A. J. H.*

THE AURORA OF MAY 14-15, 1921.

A brief summary of this brilliant and noteworthy aurora will be presented in the next issue (June) of the REVIEW. Sufficient data were not available in time to include the account in this REVIEW.—*A. J. H.*

FATHER FROC, S. J., HONORED BY FRANCE.

From *Nature*, London (May 5, 1921, p. 308), we learn that the French Government has awarded the Cross of the Legion of Honor to Father Froc, S. J., who for more than a quarter of century has been connected with the meteorological work at Zi-ka-wei Observatory. It was at the Jesuit observatory in Manila that Father Faura in 1879 for the first time predicted the existence, duration, and course of a typhoon in the Far East, and the work at both Manila and Zi-ka-wei has been of the greatest importance to those who sail the China seas. Zi-ka-wei, which stands about 4 miles from the international settlement of Shanghai, derives its name from a distinguished Chinese who was converted to the Christian faith by Matthew Ricci 300 years ago, and whose grave lies close to the observatory. Besides the observatory the Jesuit mission has here a fine cathedral, a college, an orphanage, a convent, and a natural history museum. The work of Father Froc and of his colleagues, Fathers Chevalier and Gauthier, has the support of the community at Shanghai, and the observatory at Zi-ka-wei and those at Zose and Liu-ka-pong connected with it are an object lesson to the Chinese Government.

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ORIGIN OF THE SOUTHWEST MONSOON.[1]

By G. C. SIMPSON.

[Reprinted from *Nature*, London, Mar. 31, 1921, p. 154.]

It has generally been held that the southwest monsoon owes its origin to the great difference of temperature which exists during the summer months between the heated land surface of India and the surrounding oceans, the general idea being that the warm air over the land rises, and damp air from the sea flows into India to take its place, thus resulting in the strong southwest winds, the rainfall itself being due to the cooling of the air as it rises over India.

This theory has to face the difficulties that the temperature over India is much higher in May, before the monsoon sets in, than it is during the monsoon itself; that the temperature is higher in years of bad monsoon than in years of good monsoon; and that the part of India which has the highest temperature and the lowest pressure, and where ascending currents should be the greatest, is a region of practically no rainfall throughout the monsoon.

The true explanation of the southwest monsoon can be obtained only by taking a wide view of the weather conditions over large parts of the earth's surface during the summer months in the Northern Hemisphere. It is then seen that the southwest winds are not due to the temperature in India, but are a relatively small part of a general circulation of the atmosphere caused by a region of high pressure over the South Indian Ocean and a region

[1] Abstract of a paper entitled "The Southwest Monsoon," read to the Royal Meteorological Society on Wednesday, March 16